

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSSPTA1623PAZ

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * Welcome to STN International * * * * *

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America
NEWS 2 "Ask CAS" for self-help around the clock
NEWS 3 FEB 25 CA/CAPLUS - Russian Agency for Patents and Trademarks
(ROSPATENT) added to list of core patent offices covered
NEWS 4 FEB 28 PATDPAFULL - New display fields provide for legal status
data from INPADOC
NEWS 5 FEB 28 BABS - Current-awareness alerts (SDIs) available
NEWS 6 FEB 28 MEDLINE/LMEDLINE reloaded
NEWS 7 MAR 02 GBFULL: New full-text patent database on STN
NEWS 8 MAR 03 REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS 9 MAR 03 MEDLINE file segment of TOXCENTER reloaded
NEWS 10 MAR 22 KOREAPAT now updated monthly; patent information enhanced
NEWS 11 MAR 22 Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS 12 MAR 22 PATDPASPC - New patent database available
NEWS 13 MAR 22 REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS 14 APR 04 EPFULL enhanced with additional patent information and new
fields
NEWS 15 APR 04 EMBASE - Database reloaded and enhanced
NEWS 16 APR 18 New CAS Information Use Policies available online
NEWS 17 APR 25 Patent searching, including current-awareness alerts (SDIs),
based on application date in CA/CAPLUS and USPATFULL/USPAT2
may be affected by a change in filing date for U.S.
applications.

NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

NEWS HOURS STN Operating Hours Plus Help Desk Availability
NEWS INTER General Internet Information
NEWS LOGIN Welcome Banner and News Items
NEWS PHONE Direct Dial and Telecommunication Network Access to STN
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that
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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 09:48:14 ON 27 APR 2005

=> file reg

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 09:48:23 ON 27 APR 2005
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8
DICTIONARY FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> logoff hold

	SINCE FILE	TOTAL
COST IN U.S. DOLLARS	ENTRY	SESSION
FULL ESTIMATED COST	0.43	0.64

SESSION WILL BE HELD FOR 60 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 09:48:28 ON 27 APR 2005

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSSPTA1623PAZ

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * Welcome to STN International * * * * *

NEWS	1	Web Page URLs for STN Seminar Schedule - N. America
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NEWS	3 FEB 25	CA/CAPLUS - Russian Agency for Patents and Trademarks (ROSPATENT) added to list of core patent offices covered
NEWS	4 FEB 28	PATDPAFULL - New display fields provide for legal status

data from INPADOC

NEWS	5	FEB	28	BABS - Current-awareness alerts (SDIs) available
NEWS	6	FEB	28	MEDLINE/LMEDLINE reloaded
NEWS	7	MAR	02	GBFULL: New full-text patent database on STN
NEWS	8	MAR	03	REGISTRY/ZREGISTRY - Sequence annotations enhanced
NEWS	9	MAR	03	MEDLINE file segment of TOXCENTER reloaded
NEWS	10	MAR	22	KOREAPAT now updated monthly; patent information enhanced
NEWS	11	MAR	22	Original IDE display format returns to REGISTRY/ZREGISTRY
NEWS	12	MAR	22	PATDPASPC - New patent database available
NEWS	13	MAR	22	REGISTRY/ZREGISTRY enhanced with experimental property tags
NEWS	14	APR	04	EPFULL enhanced with additional patent information and new fields
NEWS	15	APR	04	EMBASE - Database reloaded and enhanced
NEWS	16	APR	18	New CAS Information Use Policies available online
NEWS	17	APR	25	Patent searching, including current-awareness alerts (SDIs), based on application date in CA/CAPLUS and USPATFULL/USPAT2 may be affected by a change in filing date for U.S. applications.

NEWS EXPRESS JANUARY 10 CURRENT WINDOWS VERSION IS V7.01a, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 10 JANUARY 2005

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
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NEWS WWW	CAS World Wide Web Site (general information)

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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 13:26:02 ON 27 APR 2005

=> e reg

THIS COMMAND NOT AVAILABLE IN THE CURRENT FILE

The EXPAND command is used to look at the index in a file which has an index. This file does not have an index.

=> file reg

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 13:26:15 ON 27 APR 2005

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STRUCTURE FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8

DICTIONARY FILE UPDATES: 26 APR 2005 HIGHEST RN 849322-79-8

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

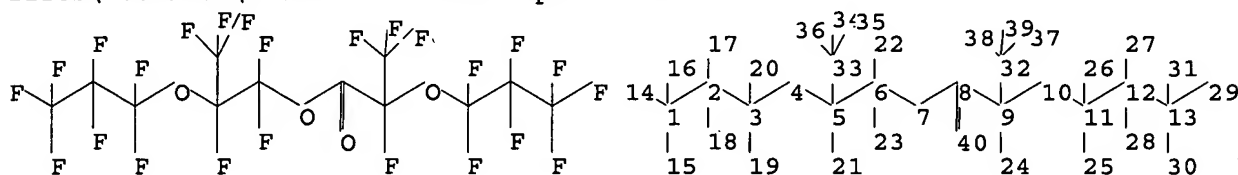
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*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added,   *
* effective March 20, 2005. A new display format, IDERL, is now    *
* available and contains the CA role and document type information.  *
*
*****
```

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=>

Uploading C:\Documents and Settings\PZucker\My Documents\Examination Auxillary files\10619784\10619784 elected specie.str



chain nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

chain bonds :

1-2 1-14 1-15 1-16 2-3 2-17 2-18 3-4 3-19 3-20 4-5 5-6 5-21 5-33 6-7
6-22 6-23 7-8 8-9 8-40 9-10 9-24 9-32 10-11 11-12 11-25 11-26 12-13
12-27 12-28 13-29 13-30 13-31 32-37 32-38 32-39 33-34 33-35 33-36

exact/norm bonds :

3-4 4-5 6-7 7-8 8-40 9-10 10-11

exact bonds :

1-2 1-14 1-15 1-16 2-3 2-17 2-18 3-19 3-20 5-6 5-21 5-33 6-22 6-23
8-9 9-24 9-32 11-12 11-25 11-26 12-13 12-27 12-28 13-29 13-30 13-31
32-37 32-38 32-39 33-34 33-35 33-36

Match level :

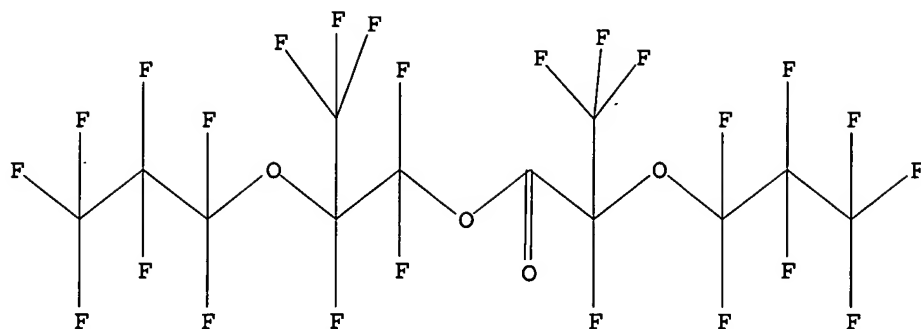
1:CLASS 2:CLASS 3:CLASS 4:CLASS 5:CLASS 6:CLASS 7:CLASS 8:CLASS 9:CLASS
10:CLASS 11:CLASS 12:CLASS 13:CLASS 14:CLASS 15:CLASS 16:CLASS 17:CLASS
18:CLASS 19:CLASS 20:CLASS 21:CLASS 22:CLASS 23:CLASS 24:CLASS 25:CLASS
26:CLASS 27:CLASS 28:CLASS 29:CLASS 30:CLASS 31:CLASS 32:CLASS 33:CLASS
34:CLASS 35:CLASS 36:CLASS 37:CLASS 38:CLASS 39:CLASS 40:CLASS

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> search l1 exact full

FULL SEARCH INITIATED 13:26:58 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 149 TO ITERATE

100.0% PROCESSED 149 ITERATIONS

1 ANSWERS

SEARCH TIME: 00.00.01

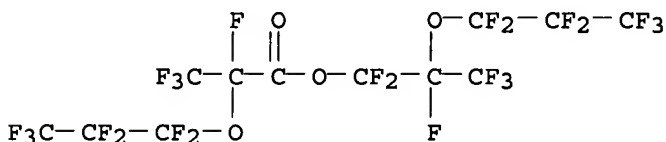
L2 1 SEA EXA FUL L1

=> d scan

L2 1 ANSWERS REGISTRY COPYRIGHT 2005 ACS on STN

IN Propanoic acid, 2,3,3,3-tetrafluoro-2-(heptafluoropropoxy)-,
1,1,2,3,3,3-hexafluoro-2-(heptafluoropropoxy)propyl ester (9CI)

MF C12 F24 O4



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

ALL ANSWERS HAVE BEEN SCANNED

=> fikle caplus

0 FIKLE

0 CAPLUS

L3 0 FIKLE CAPLUS

(FIKLE(W)CAPLUS)

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

64.31

64.52

FILE 'CAPLUS' ENTERED AT 13:27:19 ON 27 APR 2005

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FILE COVERS 1907 - 27 Apr 2005 VOL 142 ISS 18
FILE LAST UPDATED: 26 Apr 2005 (20050426/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> l3

L4 0 L3

=> l2

L5 12 L2

=> d l5 1-12 ti

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Method for producing fluorinated compound and fluorination apparatus

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Preparation of compounds while analyzing products using near-IR spectroscopy

L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Processes for producing fluorinated esters, fluorinated acyl fluorides, and fluorinated vinyl ethers

L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for producing product of decomposition of fluorinated ester compound

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for preparing fluorinated esters using gas chromatography

L5 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI A new route to perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds

L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for producing fluorinated ester compounds

L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Manufacture of perfluoro compounds and derivatives

L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for the preparation of etheric oxygen-containing perfluoroacyl fluorides and perfluorovinyl ethers

L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI A new route to perfluorinated vinyl ether monomers: synthesis of perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds

L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Synthesis of versatile poly- and perfluorinated compounds by utilizing

direct fluorination, a new route to perfluoro(propyl vinyl ether) monomer:
synthesis of perfluoro(2-propoxypropionyl) fluoride from non-fluorinated
compounds

L5 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for producing fluorine compound through liquid-phase fluorination

=> d l5 1-12 ti fbib abs

L5 ANSWER 1 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Method for producing fluorinated compound and fluorination apparatus

AN 2004:354898 CAPLUS

DN 140:356951

TI Method for producing fluorinated compound and fluorination apparatus

IN Suzuki, Yasuhiro; Watanabe, Kunio; Yanase, Koichi

PA Asahi Glass Company, Limited, Japan

SO PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004035518	A1	20040429	WO 2003-JP13312	20031017
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG		JP 2002-304638	A 20021018

OS CASREACT 140:356951

AB Disclosed is a method for producing a fluorinated compound wherein a section for introducing fluorine, a section for introducing a raw material compound to be fluorinated, a fluorination region and a section for discharging a fluorinated compound are connected with a circulating circuit in which an inert liquid is flowing in one direction, and fluorination is effected by introducing the raw material compound and fluorine into an inert liquid in said circuit, characterized in that fluorine is introduced into the flow of an inert liquid containing substantially no raw material compound. The method

allows the continuous production of a fluorinated compound with improved efficiency, with the suppression of an undesired side reaction. Thus, a mixture of F(g) (78 g/h) and N (57 g/h) and CF₃CF₂CF₂OCF(CF₃)CO₂CH₂CH(CH₃)OC H₂CH₂CH₃ (I) (52 g/h) were continuously fed into a inert liquid of CF₃CF₂CF₂OCF(CF₃)CF₂OCF(CF₃)COF (4 kg) circulating through a stainless steel tube at 20° for 300 h in an apparatus described above to give a reaction mixture containing 95.2 mol% CF₃CF₂CF₂OCF(CF₃)CO₂CF₂(CF₃)OCF₂CF₂CF₃ (product), 3.0 mol% partially fluorinated I, and 1.8% mol% fluorinated byproducts derived from cleavage of carbon bonds.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 2 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Preparation of compounds while analyzing products using near-IR spectroscopy

AN 2002:802409 CAPLUS

DN 137:325157

TI Preparation of compounds while analyzing products using near-IR spectroscopy

IN Yamamoto, Kiyoshi; Kakita, Reiko; Okamoto, Shuichi
PA Japan Carlit Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002308827	A2	20021023	JP 2001-108764 JP 2001-108764	20010406 20010406

AB Compsds. are prepared by chemical conversion of H atom of compds. showing H-X (X = arbitrary atom) vibrational absorption in near-IR region while monitoring amount of H atom by near-IR absorption. Preparation of perfluoro[1,2-bis(2-ethylhexyloxycarbonyl)]hexane by fluorination of bis(2-ethylhexyl) phthalate was carried out while monitoring the reactant conversion by near-IR spectrum.

L5 ANSWER 3 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN

TI Processes for producing fluorinated esters, fluorinated acyl fluorides, and fluorinated vinyl ethers

AN 2002:539635 CAPLUS

DN 137:94172

TI Processes for producing fluorinated esters, fluorinated acyl fluorides, and fluorinated vinyl ethers

IN Okazoe, Takashi; Watanabe, Kunio; Tatematsu, Shin; Murofushi, Hidenobu; Sato, Masakuni; Ito, Masahiro; Yanase, Koichi; Suzuki, Yasuhiro

PA Asahi Glass Company, Limited, Japan

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002055471	A1	20020718	WO 2002-JP236	20020116
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2001-8252	A 20010116
EP 1352892		A1	20031015	EP 2002-715755	20020116
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
				JP 2001-8252	A 20010116
				WO 2002-JP236	W 20020116
ZA 2003005170		A	20040709	ZA 2003-5170	20020116
				JP 2001-8252	A 20010116

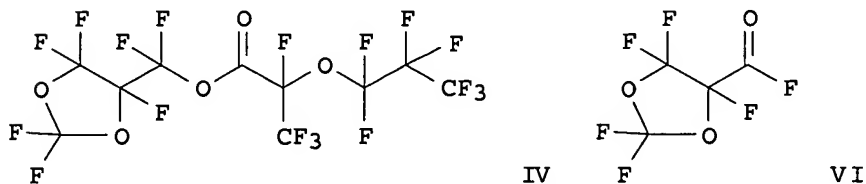
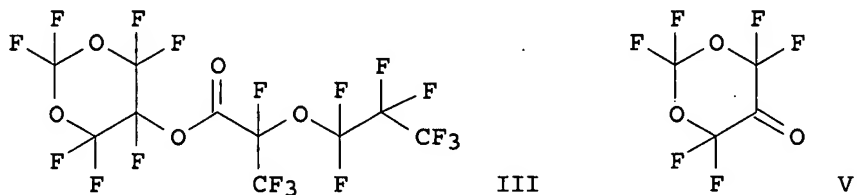
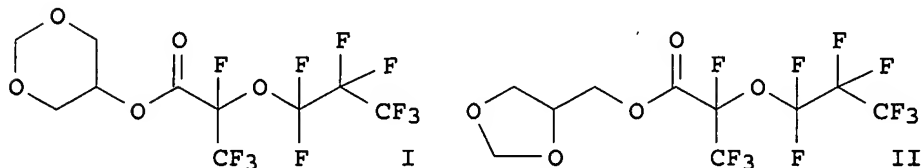
OS MARPAT 137:94172

AB Fluorinated esters are prepared in shorter steps including a transesterification step in which RACH₂OH (RA = monovalent organic group) and RAFCOOCF₂RAF [RAF = (fluorinated) RA] are subjected to transesterification to obtain RAFCOOCH₂RA, and a fluorination step in which the compound obtained is fluorinated in a liquid phase to obtain a reaction product containing RAFCOOCF₂RAF. Fluorinated acyl fluorides and perfluorovinyl ethers (e.g., CF₃CF₂CF₂OOCF₂CF₂) can be prepared in large scale with low cost from fluorinated esters.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
 TI Process for producing product of decomposition of fluorinated ester compound
 AN 2002:465955 CAPLUS
 DN 137:47203
 TI Process for producing product of decomposition of fluorinated ester compound
 IN Watanabe, Kunio; Suzuki, Yasuhiro; Yanase, Koichi; Okazoe, Takashi
 PA Asahi Glass Company, Limited, Japan
 SO PCT Int. Appl., 33 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002048085	A1	20020620	WO 2001-JP10889	20011212
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002021128	A5	20020624	JP 2000-379101	A 20001213
				AU 2002-21128	20011212
				JP 2000-379101	A 20001213
				WO 2001-JP10889	W 20011212
OS	CASREACT 137:47203; MARPAT 137:47203				
GI					



AB Disclosed is a process for production of fluorinated ketones of formula

RAFRBFCO (RAF = F, monovalent organic group; RBF = monovalent organic group) and/or fluorinated acyl fluoride of formula RCFCOF (RCF = monovalent organic group) with high productivity which comprises efficiently decomposing a fluorinated ester compound of formula RCFCO₂CFRAFRBF (RAF, RBF, RCF = same as above) at a low temperature and a high reaction rate. In this process, a fluorinated ester compound having a decomposable ester bond is decomposed at the ester bond to obtain a decomposition product. The ester bond decomposition reaction is conducted in the presence of KF at a temperature of 200° or lower substantially without using a solvent. The reaction is conducted while continuously supplying the fluorinated ester compound to the reaction zone and continuously discharging the decomposition products from the reaction zone. Thus, a 59:41 mixture of 5-hydroxy-1,3-dioxane and 1,3-dioxolane-4-methanol (100 g) and 10.7 g Et₃N were charged into a flask, and stirred at ≤10°, followed by adding dropwise 351.0 g FCOCF(CF₃)OCF₂CF₂CF₃ at ≤10° over a period of 400 min, and the resulting mixture was stirred at room temperature for 1 h and

treated

with 500 mL H₂O at ≤15° and then with 1,000 mL dichloropentafluoropropane (AK225). The bottom layer was separated, washed twice with 500 mL H₂O, dried over MgSO₄, filtered, concentrated by an evaporator, and vacuum-distilled at 59-62° and 0.4 kPa to give a mixture of esters (I and II) (328.0 g). Diluted F (20 volume % in N) was blown at 17.04 L/h and 25° into 1,701 g R-113 for 1 h in an autoclave connected at the gas outlet to a condenser (kept at 20°), a NaF pellet-packed layer, and a condenser (kept at -10°) in series, followed by injecting a solution of a mixture of I and II esters (115 g) in 863 g R-113 over a period of 24.8 h while blowing diluted F into the reaction solution. A solution of benzene in R-113 (0.04 g/mL, 30 mL) was injected into the reaction mixture at 0.15 MPa and 25-40° while blowing diluted F into the reaction solution and then stirred for 0.3 h. A solution of benzene

in

R-113 (20 mL) was again injected into the reaction mixture at 0.15 MPa and 40° while blowing diluted F into the reaction solution and then stirred for 0.3 h. After repeating the same procedure one more time upon which a total of 3.14 g benzene and 70 mL R-113 was added, the reaction mixture was stirred for 1.0 h to give a crude reaction liquid containing perfluorinated esters (III) (68% yield) and (IV) (93% yield). The crude reaction liquid (135.1 g) and 2.98 g KF were charged into a reactor and vigorously stirred at 91° for 5 h. A liquid sample (118.8 g) was collected at the outlet of the reflux condenser, which contained CF₃CF(OCF₂CF₂CF₃)COF as the main product and perfluoro-1,3-dioxan-5-one (V) (83% yield) and perfluoro-1,3-dioxolane-4-carbonyl fluoride (VI) (62% yield).

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Process for preparing fluorinated esters using gas chromatography
AN 2002:391677 CAPLUS
DN 136:401447
TI Process for preparing fluorinated esters using gas chromatography
IN Kawahara, Kengo; Isemura, Tsuguhide; Okazoe, Takashi
PA Asahi Glass Company, Limited, Japan
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002040437	A1	20020523	WO 2001-JP10116	20011120
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,			

VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,
 CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

			JP 2000-353340	A	20001120
JP 2002155031	A2	20020528	JP 2000-353340		20001120
CA 2429074	AA	20020523	CA 2001-2429074		20011120
			JP 2000-353340	A	20001120
			WO 2001-JP10116	W	20011120
AU 2002014326	A5	20020527	AU 2002-14326		20011120
			JP 2000-353340	A	20001120
			WO 2001-JP10116	W	20011120
EP 1336601	A1	20030820	EP 2001-982860		20011120
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
			JP 2000-353340	A	20001120
			WO 2001-JP10116	W	20011120
ZA 2003003344	A	20040430	ZA 2003-3344		20011120
			JP 2000-353340	A	20001120
US 2003203501	A1	20031030	US 2003-438943		20030516
			JP 2000-353340	A	20001120
			WO 2001-JP10116	A1	20011120

OS CASREACT 136:401447

AB A process for determining accurately the amount of a fluorinated ester in the preparation thereof or determining accurately the consumption of a fluorinated ester

and the amount of a formed substance in the chemical transformation of the ester allows the progress of the degree of fluorination and thermal decomposition to be monitored and enables efficient preparation of the objective

substance in a yield equal to or higher than an objective level. That is, a process for preparing a fluorinated ester from starting compds. by a chemical reaction is characterized in that the reaction is continued until the yield of the ester reaches a predetd. level as determined by gas chromatog. with a nonpolar column. This process is also useful for quality control in a manufacturing process using fluorinated ester. Thus, NaF was added to 1,1,2-trichlorotrifluoroethane (R-113) in an autoclave and cooled to -10°, to which N was blown into the mixture for 1 h and then 20% F in N for 1 h, followed by injecting a solution of MeCH₂CH₂OCHMeCH₂O₂CCF(CF₃)O(CF₂)₃F in R-113 over 19.4 h. A solution of benzene in R-113 was injected to the reaction mixture while blowing 25%F/N into the mixture and the outlet valve of the autoclave was closed and then the inlet valve of the autoclave was closed when the pressure reached at 0.12 MPa, followed by stirring the resulting mixture for 1 h. The above procedure (benzene treatment) was repeated four times while the temperature rose from -10° to room temperature and five times at room temperature, followed by blowing N

into the resulting mixture for 1 h. A anal. sample was taken by decantation and analyzed by GC at 270° using a nonpolar capillary column (J & W Inc., DB-1, 60 m length, inner diameter 0.25 mm, membrane thickness 1.0 µm) (main column) and an inactivated fused silica hollow capillary column (GL Science Inc., length 1 m, inner diameter 0.530 mm, and outer diameter

0.660 mm) (precolumn) which were connected by a capillary column connector. A hydrogen flame ionization detector was used at 280° and the structure of each peak was determined by mass spectrometer. The anal. confirmed that two peaks corresponding to perfluorinated ester, i.e. CF₃CF₂CF₂O(CF₃)CF₂O₂CCF(CF₃)OCF₂CF₂CF₃, and perfluoroacyl fluoride, i.e. CF₃CF₂CF₂O(CF₃)COF, were formed in 95 and 0.6%, resp., and completely separated in the gas chromatogram. The perfluorinated ester was analyzed substantially without decomposition

RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

TI A new route to perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds
 AN 2002:285166 CAPLUS
 DN 137:294705
 TI A new route to perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds
 AU Okazoe, Takashi; Watanabe, Kunio; Itoh, Masahiro; Shirakawa, Daisuke; Murofushi, Hidenobu; Okamoto, Hidekazu; Kawahara, Kengo; Tatematsu, Shin
 CS Res. Cent., Asahi Glass Co., Ltd., Yokohama, 221-8755, Japan
 SO Asahi Garasu Kenkyu Hokoku (2001), 51, 33-37
 CODEN: AGKHAD; ISSN: 0004-4210
 PB Asahi Garasu K.K. Chuo Kenkyusho
 DT Journal
 LA Japanese
 OS CASREACT 137:294705
 AB A new synthetic procedure for the preparation of perfluoro(alkoxyalkanoyl) fluorides, which are precursors to perfluorinated vinyl ether monomers, from non-fluorinated alkoxyalcs. has been developed. The new procedure involves esterification of non-fluorinated alkoxyalcs. with perfluoro(alkoxyalkanoyl) fluorides, direct fluorination of the resulting esters, i.e. alkoxyalcs. perfluoro(alkoxyalkanoyl) esters, by fluorine gas, and thermal decomposition of perfluorinated esters into perfluoro(alkoxyalkanoyl) fluorides in the presence of NaF as the catalyst. Available perfluoro (alkoxyalkanoyl) fluorides such as perfluoro(2-propoxypropionyl) fluoride, so called hexafluoropropylene oxide (HFPO) dimer, can be multiplied by the use of the hydrocarbon counterpart alcs. and fluorine gas as raw materials. In the case that the desired perfluoro (alkoxyalkanoyl) fluoride is not readily available, it can be obtained from its hydrocarbon counterpart alc. and an available perfluoroacyl fluoride. Thus, 1-propoxy-1-propanol was esterified with perfluoro(2-propoxypropionyl) fluoride (I) at 25-35° to give 99.2% 2-propoxy-Pr perfluoro(2-propoxypropionate) which was fluorinated by 20% F(g) in N in 1,1,2-trichlorotrifluoroethane at room temperature for 63.7 h followed by injecting a solution of benzene in 1,1,2-trichlorotrifluoroethane after closing the F(g) inlet valve, and the resulting mixture was allowed to react at 40° to give 93.2% perfluoro(2-propoxypropyl 2-propoxypropionate) (II). A suspension of NaF in II was heated at 140° for 15 in an oil bath with vigorous stirring to give 94.2% I.

L5 ANSWER 7 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
 TI Process for producing fluorinated ester compounds
 AN 2002:256214 CAPLUS
 DN 136:294541
 TI Process for producing fluorinated ester compounds
 IN Okazoe, Takashi; Watanabe, Kunio; Tatematsu, Shin; Yanase, Koichi; Suzuki, Yasuhiro; Shirakawa, Daisuke
 PA Asahi Glass Co., Ltd., Japan
 SO PCT Int. Appl., 52 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002026688	A1	20020404	WO 2001-JP8433	20010927
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2000-295141	A 20000927

AU 2001092268	A5	20020408	AU 2001-92268	20010927
			JP 2000-295141	A 20000927
			WO 2001-JP8433	W 20010927
CA 2423910	AA	20030326	CA 2001-2423910	20010927
			JP 2000-295141	A 20000927
			WO 2001-JP8433	W 20010927
EP 1323703	A1	20030702	EP 2001-972529	20010927
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
			JP 2000-295141	A 20000927
			WO 2001-JP8433	W 20010927
ZA 2003002352	A	20040326	ZA 2003-2352	20010927
			JP 2000-295141	A 20000927
US 2003216595	A1	20031120	US 2003-397521	20030327
			JP 2000-295141	A 20000927
			WO 2001-JP8433	A1 20010927

OS CASREACT 136:294541; MARPAT 136:294541

AB This document discloses a process for producing an industrially useful fluorinated ester compound and a fluorine compound such as an acid fluoride compound. The title compds. are intermediates for monomers. The process for producing a fluorinated ester compound comprises fluorinating in a liquid phase a compound which is an ester of a hydroxyl compound with a compound having an acyl fluoride group and which has a structure capable of being fluorinated, and said process is characterized in that the ester compound being fluorinated is in the form of a liquid mixture with the compound having an acyl fluoride group.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Manufacture of perfluoro compounds and derivatives
AN 2002:256213 CAPLUS
DN 136:294528
TI Manufacture of perfluoro compounds and derivatives
IN Watanabe, Kunio; Okazoe, Takashi; Tatematsu, Shin; Shirakawa, Daisuke
PA Asahi Glass Co., Ltd., Japan
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002026687	A1	20020404	WO 2001-JP8367	20010926
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2000-295134	A 20000927
	AU 2001090271	A5	20020408	AU 2001-90271	20010926
				JP 2000-295134	A 20000927
				WO 2001-JP8367	W 20010926

OS CASREACT 136:294528; MARPAT 136:294528

AB Perfluoro compds. and perfluoro acid fluorides are efficiently prepared. Compds. of the general formula $\text{RAFOCF}(\text{CF}_3)\text{CF}_2\text{OCOCF}(\text{CF}_3)\text{ORBF}$ are prepared by fluorinating a hydrogen-containing fluorinated compound, e.g., $\text{RAHOCH}(\text{CH}_3)\text{CH}_2\text{OCOCF}(\text{CF}_3)\text{ORBH}$ in a liquid phase in the presence of a product of partial fluorination of the hydrogen-containing fluorinated compound, e.g.,

RAFOCH(CF3)CF2OCOCF(CF3)ORBF or RAFOCF(CF3)CHFOCOCF(CF3)ORBF (RAH, RBH = monovalent organic group; RAF, RBF = monovalent perfluorinated organic group). Further, the compds. thus prepared can be converted into perfluoro acid fluorides via ester linkage cleavage, and the perfluoro acid fluorides can be further converted into perfluoro vinyl ethers via pyrolysis.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Process for the preparation of etheric oxygen-containing perfluoroacyl fluorides and perfluorovinyl ethers
AN 2002:107288 CAPLUS
DN 136:151577
TI Process for the preparation of etheric oxygen-containing perfluoroacyl fluorides and perfluorovinyl ethers
IN Okazoe, Takashi; Murofushi, Hidenobu; Watanabe, Kunio; Tatematsu, Shin
PA Asahi Glass Company, Limited, Japan
SO PCT Int. Appl., 42 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002010107	A1	20020207	WO 2001-JP6597	20010731
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
				JP 2000-231157	A 20000731

OS MARPAT 136:151577

AB The invention relates to a process for the preparation of industrially useful fluorine compds. such as acyl fluorides, i.e., a process which comprises reacting a compound of the following general formula:
RAHOCH(CH3)CH2OCOCF(CF3)ORBF having a fluorine content of 30% by mass or above with fluorine in a liquid phase to thereby obtain a compound of the following general formula: RAFOCF(CF3)CF2OCOCF(CF3)ORBF, and subjecting this compound to ester linkage cleavage (wherein RAH is C1-20 alkyl or C1-20 alkyl containing one or more etheric oxygen atoms; RAF is a group derived from RAH by perfluorination; and RBF is C1-20 perfluoroalkyl or C1-20 perfluoroalkyl containing one or more etheric oxygen atoms). Thus, CH3CH2CH2OCH(CH3)CH2OH obtained from propylene oxide and 1-propanol were reacted with CF3CF2CF2OCF(CF3)COF to give CF3CF2CF2OCF(CF3)COOCH2CH(CH3)OCH2CH2CH3, fluorinated with F2 in R 113 containing NaF to give CF3CF2CF2OCF(CF3)COOCF2CF(CF3)OCF2CF2CF3, thermally decomposed to give CF3CF2CF2OCF(CF3)COF, then give CF3CF2CF2OCF:CF2.

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI A new route to perfluorinated vinyl ether monomers: synthesis of perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds
AN 2001:872315 CAPLUS
DN 136:135058
TI A new route to perfluorinated vinyl ether monomers: synthesis of perfluoro(alkoxyalkanoyl) fluorides from non-fluorinated compounds
AU Okazoe, Takashi; Watanabe, Kunio; Itoh, Masahiro; Shirakawa, Daisuke; Tatematsu, Shin
CS Research Center, Asahi Glass Co. Ltd., Kanagawa-ku, Yokohama, 221-8755, Japan

SO Journal of Fluorine Chemistry (2001), 112(1), 109-116
CODEN: JFLCAR; ISSN: 0022-1139
PB Elsevier Science S.A.
DT Journal
LA English
AB A new synthetic procedure for the preparation of various perfluoro(alkoxyalkanoyl) fluorides, which are precursors to perfluorinated vinyl ether monomers, from non-fluorinated alkoxy alcs. was developed. Available perfluoro(alkoxyalkanoyl) fluorides such as perfluoro(2-propoxypropionyl) fluoride, so-called HFPO dimer, can be multiplied by the use of the hydrocarbon counterpart alcs. and fluorine gas as raw materials. In the case that the desired perfluoro(alkoxyalkanoyl) fluoride is not readily available, it can be obtained from its hydrocarbon counterpart alc. and an available perfluoroacyl fluoride.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Synthesis of versatile poly- and perfluorinated compounds by utilizing direct fluorination, a new route to perfluoro(propyl vinyl ether) monomer: synthesis of perfluoro(2-propoxypropionyl) fluoride from non-fluorinated compounds
AN 2001:186960 CAPLUS
DN 134:367222
TI Synthesis of versatile poly- and perfluorinated compounds by utilizing direct fluorination, a new route to perfluoro(propyl vinyl ether) monomer: synthesis of perfluoro(2-propoxypropionyl) fluoride from non-fluorinated compounds
AU Okazoe, Takashi; Watanabe, Kunio; Itoh, Masahiro; Shirakawa, Daisuke; Murofushi, Hidenobu; Okamoto, Hidekazu; Tatematsu, Shin
CS Research Center, Asahi Glass Co., Ltd., Yokohama, 221-8755, Japan
SO Advanced Synthesis & Catalysis (2001), 343(2), 215-219
CODEN: ASCAF7; ISSN: 1615-4150
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB Perfluoro(2-propoxypropionyl) fluoride, which is the precursor of the perfluorinated Pr vinyl ether (PPVE) monomer of an industrially important perfluoroalkoxy copolymer (PFA), was synthesized by utilizing direct fluorination of the non-fluorinated counterpart for the first time. The partially-fluorinated ester synthesized from the desired perfluorinated acid fluoride itself and the non-fluorinated alc., which has a carbon skeleton corresponding to the desired compound, was perfluorinated by liquid-phase direct fluorination with elemental fluorine. Degradation of the resulting perfluorinated ester gave 2 mols. of the desired acid fluoride. In a sense, this process can be called self-multiplication of a perfluorinated acid fluoride from a non-fluorinated alc.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN
TI Process for producing fluorine compound through liquid-phase fluorination
AN 2000:688202 CAPLUS
DN 133:266514
TI Process for producing fluorine compound through liquid-phase fluorination
IN Okazoe, Takashi; Watanabe, Kunio; Tatemasu, Shin; Murofushi, Hidenobu
PA Asahi Glass Company, Limited, Japan
SO PCT Int. Appl., 83 pp.
CODEN: PIXXD2

DT Patent
LA Japanese

FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2000056694	A1	20000928	WO 2000-JP1765	20000323
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
CA 2362695		AA	20000928	CA 2000-2362695	20000323
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
				WO 2000-JP1765	W 20000323
AU 2000033258		A5	20001009	AU 2000-33258	20000323
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
				WO 2000-JP1765	W 20000323
EP 1164122		A1	20011219	EP 2000-911298	20000323
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
				WO 2000-JP1765	W 20000323
RU 2243205		C2	20041227	RU 2001-128508	20000323
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
				WO 2000-JP1765	W 20000323
JP 2001139509		A2	20010522	JP 2000-166773	20000602
				JP 1999-246154	A 19990831
WO 2001094285		A1	20011213	WO 2001-JP1735	20010306
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
				JP 2000-166773	A 20000602
AU 2001036108		A5	20011217	AU 2001-36108	20010306
				JP 2000-166773	A 20000602
				WO 2001-JP1735	W 20010306
EP 1288183		A1	20030305	EP 2001-908356	20010306
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
				JP 2000-166773	A 20000602
				WO 2001-JP1735	W 20010306
ZA 2001007731		A	20020919	ZA 2001-7731	20010919
				JP 1999-78544	A 19990323
US 2002022752		A1	20020221	US 2001-960381	20010924
US 6586626		B2	20030701		
				JP 1999-78544	A 19990323
				JP 1999-246154	A 19990831
				WO 2000-JP1765	W 20000323
ZA 2002000832		A	20030130	ZA 2002-832	20020130
				JP 1999-246154	A 19990831
US 2003139570		A1	20030724	US 2002-307388	20021202
				JP 2000-166773	A 20000602
				WO 2001-JP1735	A1 20010306
US 2003204099		A1	20031030	US 2003-421924	20030424
				JP 1999-78544	A 19990323

US 2005020855	A1	20050127	JP 1999-246154	A	19990831
			WO 2000-JP1765	A1	20000323
			US 2001-960381	A1	20010924
			US 2004-915423		20040811
			JP 1999-78544	A	19990323
			JP 1999-246154	A	19990831
			WO 2000-JP1765	A1	20000323
			US 2001-960381	A1	20010924
			US 2003-421924	A1	20030424

PATENT FAMILY INFORMATION:

FAN 2001:167952

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001016085	A1	20010308	WO 2000-JP5888	20000830
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
				JP 1999-246154	A 19990831
				JP 2000-211722	A 20000712
	JP 2001139509	A2	20010522	JP 2000-166773	20000602
				JP 1999-246154	A 19990831
	CA 2381351	AA	20010308	CA 2000-2381351	20000830
				JP 1999-246154	A 19990831
				JP 2000-211722	A 20000712
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	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
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OS CASREACT 133:266514; MARPAT 133:266514

AB A process for producing a fluorine compound such as industrially useful perfluorinated alkanolic acid fluoride derivative, from inexpensive materials in short steps and high yields is described. The process comprises reacting a compound RA-E1, e.g., RACH₂OH, with a compound RB-E2, e.g., XCORB, to form a compound RA-E-RB (I), e.g., RACH₂OCORB, fluorinating the compound I in a liquid phase to form a compound RAF-EF-RBF (II), e.g., RAFCF₂OCORBF, and converting the compound II into a compound RAF-EF1, e.g., RAFCOF, and/or a compound RBF-EF2, e.g., RBFCOF, [wherein RA, RB = monovalent saturated (halo)hydrocarbyl optionally containing heteroatoms, monovalent organic group which can be converted into RHF group in the liquid phase; RHF = group derived by replacing ≥1 H atom(s) of monovalent (partially halogenated) saturated hydrocarbyl optionally containing heteroatom(s) with fluorine atom(s); RAF and RBF are fluorinated RA and RB, resp.; X = halo]. Thus, 46.5 g CF₃(CF₃CF₂CF₂O)CFCOF was added dropwise to 16.5 g CH₃(CH₃CH₂CH₂O)CHCH₂OH at 26-31° over a period of 2 h with bubbling N into the reaction mixture to give, after workup and vacuum distillation, CF₃CF(OCF₂CF₂CF₃)CO₂CH₂CH(OCH₂CH₂CH₃)CH₃ (III) in three fractions 29 g (68% purity), 19 g (98% purity), and 4 g (97 % purity). The last two fractions were combined, a portion of which (19.5 g) was dissolved in 250 g R-113 to give a solution of III. The latter solution was injected into a cooled (-10°) mixture of 324 g R-113 and 26.1 g NaF in an autoclave over a period of 17.4 h while bubbling F(g) at 5.66 L/h in to the reaction mixture to give CF₃CF(OCF₂CF₂CF₃)CO₂CF₂CF(OCF₂CF₂CF₃)CF₃ in 68% based on ¹⁹NMR which was purified by vacuum distillation. The latter compound (15 g) was placed in a stainless steel ampule and heated at 200° for 2 h to give CF₃CF(OCF₂CF₂CF₃)COF in 85% yield based on ¹⁹NMR.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	55.24	119.76

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-8.76	-8.76

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